Title (en)

ATMOSPHERIC PRESSURE ION SOURCE FOR MASS SPECTROMETRY

Title (de)

ATMOSPHÄRENDRUCK-IONENQUELLE FÜR DIE MASSENSPEKTROMETRIE

Title (fr)

SOURCE IONIQUE A PRESSION ATMOSPHERIQUE POUR SPECTROMETRIE DE MASSE

Publication

**EP 1874442 A2 20080109 (EN)**

Application

**EP 06740350 A 20060404**

Priority

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- US 66854405 P 20050404

Abstract (en)

[origin: WO2006107831A2] A multiple function atmospheric pressure ion source interfaced to a mass spectrometer comprises multiple liquid inlet probes that can be operated alternately or simultaneously. The output from at least two liquid inlet probes are configured to intersect during operation selectively allowing ion to neutral and/or ion to ion gas phase reactions to occur in the mixing region of the two probe outputs. The evaporating spray of sample liquid produced from a sample inlet probe is intersected by the neutral gas or ion and neutral gas mixture generated from one or more inlet probes allowing gas phase ion to neutral and/or ion to ion gas phase reactions of the introduced sample to occur in a mixing region. Liquid and gas species introduced through one or more non sample inlet probes is selected to optimize complimentary ionization modes in the mixing region. Reagent ions can be produced through Electrospray, photoionization, corona discharge and glow discharge ionization from the additional inlet probes to generate reagent ion populations. These ions then promote Atmospheric Pressure Chemical Ionization through ion-neutral reactions in the mixing region of the sprayed sample solution prior to sampling the resulting ion population into vacuum for mass to charge analysis. Ions generated from the additional inlet probes can be reacted with opposite polarity multiply charged ions generated from the sample inlet probe in the mixing region to promote charge reduction or electron transfer dissociation of sample ions. Selected neutral gas species can also be introduced into the sample inlet primary probe mixing region to promote charge reduction of multiply charged ions through ion-neutral reactions. Different ion source operating modes can be rapidly turned on and off under manual or software control during the introduction of a primary sample solution creating a multiple function ion source.

IPC 8 full level

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